

Unit 1: Measurement

Study Guide

Lab Safety:

1. Describe lab safety procedures and techniques

2. Draw the layout of the lab and label the safety features.
(fume hood, safety glasses, fire blanket, gas safety button, shower,
eye wash station, sharps container)

Scientific Method:

1. What are the steps of the scientific method?

2. Provide a sample study (you create) that follows the steps of the scientific method.

Length:

1. What metric unit would you use to measure the following for length:

a. Distance between two cities _____

b. Length of the classroom _____

c. Length of a pencil _____

d. Length of a book _____

e. Length of a thumbtack _____

f. A person's height _____

Volume:

1. Calculate the volume of a regular shaped object with the following dimensions: 2.3 cm length, 2.1 cm width, 1.7 cm height.

2. Calculate the volume of an irregular shaped object. The object was placed in a graduated cylinder and the water level rose from 18.7 mL to 29.3 mL.

Metric to Metric Conversions:

1. Convert 18 centimeters to millimeters

2. Convert 23 meters to centimeters

3. Convert 88 kilometers to meters

4. Convert 55 millimeters to centimeters

5. Convert 221 millimeters to meters

6. Convert 97 meters to kilometers

Metric to American Conversions:

1. Convert 19 inches to centimeters
2. Convert 36 miles to kilometers
3. Convert 19 degrees Celsius to degrees Fahrenheit
4. Convert 18 liters to gallons
5. Convert 29 kilograms to pounds
6. Convert 75 degrees Fahrenheit to degrees Celsius

Significant Digits:

1. Count the number of sig figs in the following:

a. 725 _____

b. 36.5 _____

c. 0.0008700 _____

d. 5600 _____

e. 14.00 _____

f. 100 _____

2. Calculate the following using proper significant digits:

a. 76×1.887

b. 12.5×4.1

c. $3.998 + 4.3$

d. $12 + 42.2223231$

Scientific Notation:

1. Write the following in scientific notation:

a. 0.0000076 _____

b. 56700000000 _____

c. 0.000000000055 _____

2. Write the following numbers in regular form:

a. 4.3×10^7 _____

b. 3.45×10^{-6} _____

c. 9.2×10^{-7} _____

Density:

1. You have a regularly shaped object with the following dimensions: 3.4 cm length, 2.7 cm width, and 2.2 cm height. The mass of this object is 55.2 grams. What is the density of this object? Will this object sink or float in water?

2. You have an irregularly shaped object. This irregularly shaped object is placed in a graduated cylinder and the water level rose from 22.3 mL to 56.8 mL. The mass of this object is 32.1 grams. What is the density of this object? Will this object sink or float in water?

